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IS 726 (1982): GALVANIZED STEEL BUCKETS FOR GENERAL USE
[MED 33: Utensils, Cutlery and Domestic Hardware]



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“Knowledge is such a treasure which cannot be stolen”

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IS : 726 - 1982

Indian Standard

SPECIFICATION FOR
GALVANIZED STEEL BUCKETS FOR
GENERAL USE

UDC 621-642-14-669-14 : 669 586



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INDIAN STANDARDS INSTITUTION
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NEW DELHI 110002

Gr 3

September 1982

Indian Standard
SPECIFICATION FOR
GALVANIZED STEEL BUCKETS FOR
GENERAL USE
(*Second Revision*)

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Indian Standard
SPECIFICATION FOR
GALVANIZED STEEL BUCKETS FOR
GENERAL USE
(*Second Revision*)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 22 February 1982, after the draft finalized by the Domestic Hardware Sectional Committee had been approved by the Consumer Products and Medical Instruments Division Council.

0.2 This standard was first published in 1956 and subsequently revised in 1964 to exclude the buckets for fire fighting from this standard (which were separately covered in IS: 2546-1974*, to replace fps units by metric units and to incorporate certain modifications pertaining to the quality and the thickness of steel sheets to be used for the body and bottom of buckets).

0.3 The standard has been widely used as a result of which certain changes became necessary. The present revision incorporates the modifications relating to the specification of material, thickness of galvanized coating, thickness of steel sheet and the manufacturing details, which shall be helpful in the effective implementation of this standard.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, or analysis, shall be rounded off in accordance with IS: 2-1960f. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the requirements for material, dimensions, manufacture, finish and performance of galvanized steel buckets for general use.

*Specification for galvanized mild steel fire bucket (*first revision*).

†Rules for rounding off numerical values (*revised*).

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2. CLASSIFICATION

2.1 Buckets shall be of two qualities, namely, 'Standard Quality' and 'Utility Quality'.

3. SIZES

3.1 Buckets shall be of the following sizes:

Standard quality buckets 200, 225, 250, 275, 300, 325 and
350 mm

Utility quality buckets 175, 200, 225, 250, 275, 300, 325
and 350 mm

3.1.1 The size of a bucket shall be denoted by its diameter at the top in millimetres.

4. MATERIAL

4.1 Steel Sheets — Steel sheets used for the body, bottom and bottom ring shall be either cold-rolled (annealed) quality conforming to IS : 513-1973* or hot-rolled quality conforming to IS : 1079-1973†.

4.1.1 The thickness of the steel sheet used for body, bottom ear, bottom ring and the diameter of the mild steel rod for the handle before galvanizing, shall conform to the following:

Part of the Bucket	Thickness in mm	
	Standard Quality Buckets	Utility Quality Buckets
Body	0.63	0.63
Bottom	1.00	0.63
Bottom rings	1.60	0.63
Handle diameter	10 Min	10 Min
Ear	2.50 mm for sizes up to 250 mm and 3.15 mm for sizes 275 mm and above for both qualities of buckets	

NOTE 1 — Tolerances on dimensions of thickness of steel sheet used for body, bottom and bottom rings shall be as per IS : 513-1973* or IS : 1079-1973† whichever is applicable.

NOTE 2 — Tolerances on ear dimensions shall be as per IS : 1852-1973‡.

*Specification for cold rolled carbon steel sheets (*second revision*).

†Specification for hot rolled carbon steel sheet and strip (*third revision*).

‡Specification for rolling and cutting tolerances for hot-rolled steel products (*second revision*).

4.2 Mild Steel Bods —Mild steel rods used in the' manufacture of handle shall conform to Grade St 32-0 of IS : 1977-1975*.

4.3 Mild Steel Wire — Mild steel wire used for stiffening the top rim shall conform to IS : 280-1978†.

5. SHAPE AND DIMENSION

5.1 The shape and leading dimensions of the buckets shall be as *given* in Fig. 1 to 4 and Table 1.

6. MANUFACTURE

6.1 Standard Quality Buckets — The body shall be in two halves which shall be joined together either by butt welding, or seam welding, or by riveting or by a lock joint as shown in Fig. 2A. The width of the seam lock shall be not less than; 12 mm for all sizes of buckets except for 200 mm and 225 mm sizes for which the width of the seam shall be not less than 8 mm. The bottom shall be dished and shall be joined to the body either by lap welding or by a lock joint as shown in Fig. 3. The top rim of the body shall be uniformly beaded with wire (*see* Fig. 1). The ears shall be fitted to the top of the rim at the longitudinal joint of the body by means of at least three tinmen flat head rivets with the flat head on the inside. The ears shall be drilled or punched to receive the handle. The ends of the handle shall be bent up as shown in Fig. 1. The ends of the bottom ring shall be either welded or riveted together with at least two rivets and with a lap of at least 25 mm. The bottom ring shall be joined to the body by welding (*see* Fig. 3) which shall be done only at two diametrically opposite seams. The bottom end of the bottom ring shall be straight and not folded.

6.2 Utility Quality Buckets — The manufacture of utility quality buckets shall conform to the requirements specified under **6.1** except that:

- a) the two halves of the body shall be joined together by lapping, the length of overlap shall be not less than 12 mm for all sizes of buckets except 175-mm, 200-mm and 225-mm sizes for which the length of overlap shall be not less than 10 mm and riveted together by means of No. 6 tinmen flat head rivets { *see* IS : 866-1957) (with the flat head on the inside) with a maximum pitch of 25 mm (*see* Fig. 2B);
- b) the bottom shall be dished and shall be joined by a lock joint as shown in Fig. 3;

*Specification for structural steel (ordinary quality) (*second revision*).

†Specification for mild steel Wire for general engineering purposes (*third revision*).

‡Specification for tinmen's rivets.

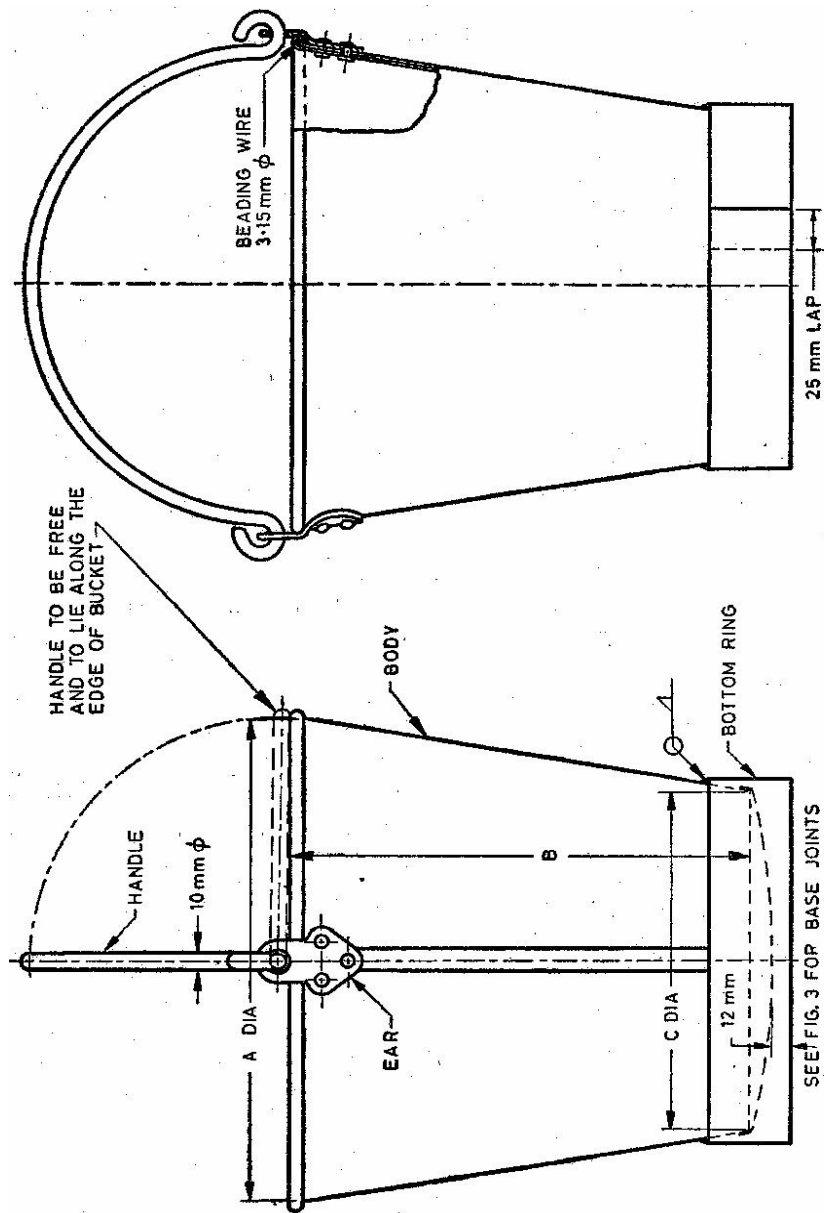


FIG. 1 STEEL BUCKET

- c) the bottom ring shall be joined with the body either by welding or by means of two to four No. 6 tinmen flat head rivets equally spaced apart and with the flat head on the inside; and
- d) the end of the bottom ring shall be folded inside and the width of the inside fold shall be not less than 6 mm.

6.3 General — All welds shall be free from porosity, blow holes and brittleness. The locking shall cover at least 70 percent of the width of the lock joint and the seam shall be close-rolled and finished smooth. The parts of the joint shall be well-pressed and shall be free from gaps. The beading shall be fully formed without gap.

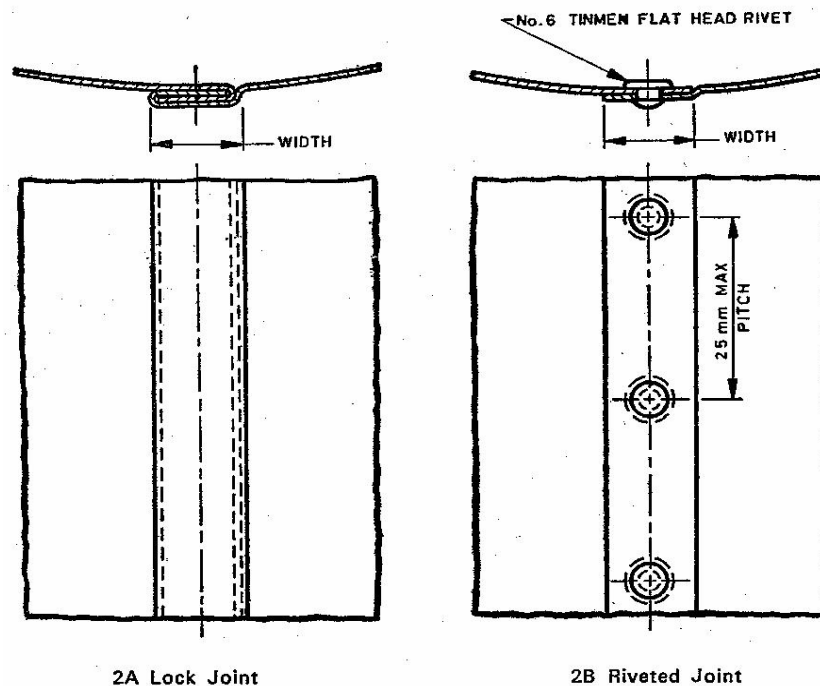


FIG. 2 JOINTS FOR THE BODY

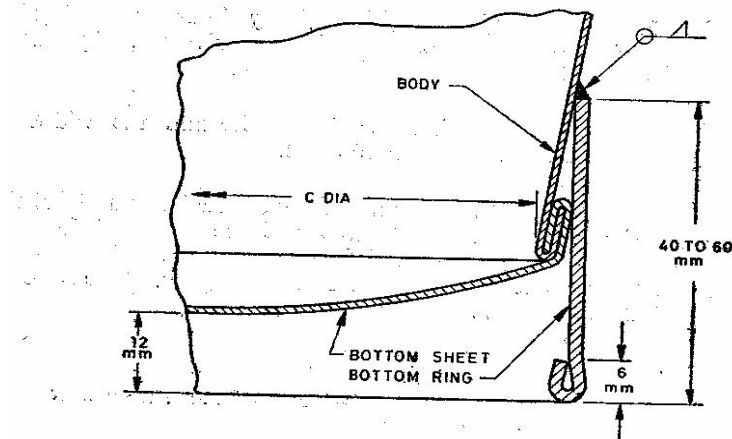


FIG. 3 DETAILS SHOWING METHOD OF JOINING BOTTOM TO BODY AND
BOTTOM RING TO BODY

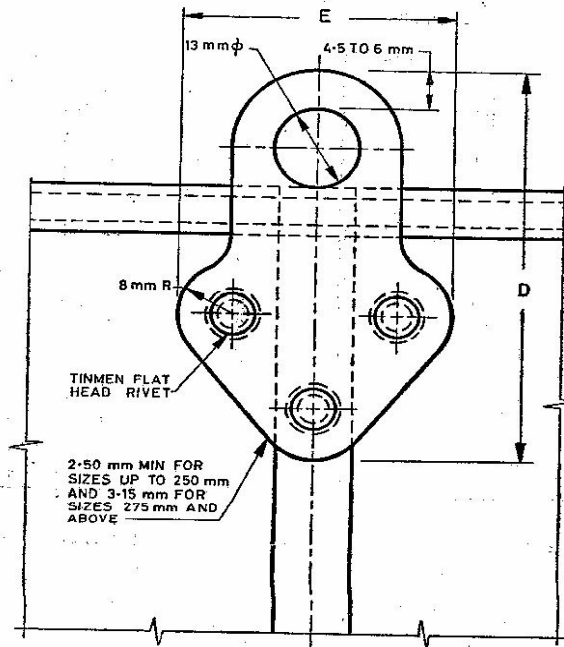


FIG. 4 DETAILS OF EAR

TABLE 1 ESSENTIAL DIMENSIONS AND NOMINAL CAPACITIES OF GALVANIZED STEEL BUCKETS FOR GENERAL USE

(Clause 5.1)

NOMINAL SIZE	BODY			EAR		*NOMINAL CAPACITY
	Dia at Top	Depth	Dia at Bottom	Height	Width	
	A	B	C	D	E	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
mm	mm	mm	mm	mm	mm	l
175	175±5	150±5	125±5	55±3	35±3	2·7
200	200±5	175±5	135±5	55±3	35±3	4·0
225	225±5	200±5	150±5	55±3	35±3	5·5
250	250±5	225±5	170±5	55±3	35±3	8·0
275	275±5	250±5	190±5	63±3	40±3	11·0
300	300±5	275±5	210±5	63±3	40±3	14·0
325	325±5	300±5	230±5	63±3	40±3	18·0
350	350±5	325±5	250±5	63±3	40±3	23·0

*The capacity shall be calculated when the bucket is full up to the brim.

7.1 All parts of the bucket shall be finished smooth and sharp edges rounded off-

7.2 The buckets after fabrication shall be hot-dip galvanized. The coating of zinc on any portion shall be not less than 003 g/em* (single surface). The galvanized coating shall be free from blisters, grittiness, stains and bare spots, in accordance with Appendix A of IS : 2629-1966*.

7.2.1 The galvanizing shall withstand four immersions of one-minute duration when tested in accordance with IS : 2633-1972f.

7.3 The mating of the bottom ring with body and bottom shall be such that recess are avoided as far as possible.

♦Recommended practice for hot-dip galvanizing of iron and steel.

† Methods of testing uniformity of coating on zinc coated articles (*first revision*).

8. PERFORMANCE TEST

8.1 Buckets shall be leak-proof. The recommended methods for testing the buckets for leakage are given in **8.1.1** and **8.1.2**.

8.1.1 The bucket shall be filled with water to the brim and kept for 15 minutes. The bucket shall not show any sign of leakage during this period.

8.1.2 A water tank of suitable size and full of water shall be used for conducting the test. The dry empty bucket with its top facing upwards shall be pressed down the water vertically taking care that the top is at least 6 mm above the water level. It shall be observed whether any water gets into the bucket from the bottom or sides of the bucket. If any water enters the bucket, it shall be considered to have failed in the test. The bucket shall be withdrawn, reversed (with top downwards) and again pressed down the water vertically without agitating the water. Should any air bubble be seen escaping through the water, the bucket shall be deemed to leak and, therefore, shall be considered to have failed in the test.

9. SCALE OF SAMPLING AND CRITERION FOR CONFORMITY

9.1 Lot — In any consignment, all the buckets of same quality, same size and from the same batch of manufacture shall be grouped together to constitute a lot.

9.2 Sample Size — The number of buckets to be selected from a lot shall depend on the size of the lot and shall be in accordance with col 1 and 2 of Table 2. These buckets shall be selected at random from at least 10 percent of the packages subject to a minimum of three, equal number of buckets being selected from each such package. If the number of packages is less than three, all the packages shall be selected.

9.2.1 *For Shape and Dimension, Manufacturing Defects, Finish and Leakage* — All the buckets selected as in 9.2 shall be inspected for shape and dimensions (*see 5*), manufacturing defects (*see 6*), finish (*see 7*) and for leakage (*see 8*). Any bucket which fails to satisfy the requirements of any one or more of the characteristics shall be considered as defective bucket. The lot shall be considered as conforming to these requirements, if the number of defective buckets does not exceed the permissible number of defective buckets given in col 3 of Table 2.

9.2.2 *For Galvanization Test*—From the lot conforming under **9.2.1**, a sub-sample in accordance with col 4 of Table 2 shall be drawn and tested for galvanization. The lot shall be considered as conforming to the galvanizing requirements, if no bucket fails in this test.

TABLE 2 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY*(Clause 9.2)*

NO. OF BUCKETS IN THE LOT	SAMPLE SIZE	PERMISSIBLE NO. OF DEFECTIVE BUCKETS	SUB-SAMPLE SIZE
(1)	(2)	(3)	(4)
Up to 25	5	0	1
26 to 50	8	0	1
51 to 150	13	1	2
151 to 300	20	1	2
301 to 500	32	2	3
501 to 1 000	50	3	3
1 001 to 3 000	80	5	3
3 001 and above	125	7	5

10. MARKING

10.1 Each bucket shall be embossed on its side with the manufacturer's name or trade-mark, size, quality of bucket and any other marking that may be required by the purchaser. Embossing shall be sufficiently deep so that the marking remains quite legible after galvanizing.

10.1.1 The buckets may also be marked with the ISI Certification Mark.

NOTE -*- The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

11. PACKING

11.1 Unless otherwise specified, buckets shall be packed in bundles of six in the case of 325-mm and 350-mm sizes and in bundles of 12 in the case of all other sizes.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units			
Quantity	Unit	Symbol	
Length	metre	m	
Mass	kilogram	kg	
Time	second	s	
Electric current	ampere	A	
Thermodynamic temperature	kelvin	K	
Luminous intensity	candela	cd	
Amount of substance	mole	mol	
Supplementary Units			
Quantity	Unit	Symbol	
Plane angle	radian	rad	
Solid angle	steradian	sr	
Derived Units			
Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²
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